AMENDMENTS TO THE CLAIMS

1. (Original) An implantable device for measuring an analyte in a biological fluid, comprising; a) a housing comprising an electronic circuit; and b) a sensor operably connected to said electronic circuit of said housing, said sensor comprising i) a member for determining the amount of glucose in a biological sample ii) a bioprotective membrane said bioprotective membrane positioned more distal to said housing than said glucose determining member and substantially impermeable to macrophages, and iii) an angiogenic layer, said angiogenic layer positioned more distal to said housing than said bioprotective membrane.

2. (Original) An implantable device according to claim 1 wherein said angiogenic layer and said bioprotective membrane are combined to form a composite angiogenic/bioprotective membrane.

3. (Original) The device of claim 2 wherein said composite membrane comprises an ePTFE layer and a biostable layer.

4. (Original) The device of claim 3 wherein said bio stable layer comprises a bio stable urethane and a hydrophilic polymer.

5. (Original) The device of claim 4 wherein said hydrophilic polymer comprises polyvinylpyrrolidone.

6. (Original) The device of claim 5 wherein said polyvinylpyrrolidone is present in said biostable layer at a concentration of not less than 20 weight percent and not more than 35 weight percent.

7. (Original) The device of claim 3 wherein said biostable layer includes a sensor interface.

8. (Original) The device of claim 3 wherein said biostable layer is substantially impermeable to macrophages at said sensor interface.

9. (Original) The device of claim 3 wherein said ePTFE layer includes a tissue interface.

10. (Currently amended) The device of claim ~~3~~ 9 wherein said ePTFE layer promotes vascularizton at said tissue interface.

11. (Original) An implantable device according to claim 1 further comprising iv) an interference layer between said bioprotective membrane and said glucose determining member.

12. (Original) An implantable device according to claim 11 wherein said interference layer provides a controlled sample volume to said glucose determining member.

13. (Original) An implantable device according to claim 11 wherein said interference layer further comprises a metal film on the side of said layer distal to said sensor.

14. (Original) An implantable device according to claim 13 wherein said metal film is gold or platinum.

15. (Original) An implantable device according to claim 1 wherein said sensor is selected from the group consisting of a surface plasmon resonance sensor, a surface acoustic wave sensor, an optical absorbance sensor, a polarized light optical rotation sensor and a fluorescence sensor.

16. (Original) An implantable device according to claim 15 wherein said optical absorbance sensor is an infrared optical absorbance sensor.

17. (Original) An implantable device according to claim 1 wherein said bioprotective membrane further comprises pores having diameters ranging from about 0.1 micron to about 1.0 micron.

18. (Original) An implantable device according to claim 1 wherein said bioprotective membrane is a biostable material selected from the group consisting of polyurethane, polytetrafluoroethylene, polypropylene, polyethylene and polysulfone.

19. (Original) An implantable device according to claim 1 wherein said angiogenic layer is a biostable material selected from the group consisting of hydrophilic polyvinylidene fluoride, mixed cellulose esters, ePTFE, polyester, polyvinyl chloride, polypropylene, polyethylene, polysulfone, polyethersulfone, cellulose acetate, nylon, polycarbonate and polymethylmethacrylate.

20. (Original) An implantable device according to claim 1 further comprising c) a material for securing said device to biological tissue, said securing material associated with said housing.

21. (Original) An implantable device according to claim 20, wherein said securing material is a material selected from the group consisting of nonwoven or woven polyester, polypropylene, polytetrafluoroethylene and expanded polytetrafluoroethylene.

22. (Original) An implantable device according to claim 1 wherein said housing further comprises an apparatus for transmitting data to a location external to said device.

23. (Original) An implantable device according to claim 22, wherein said data transmitting apparatus comprises a radiotelemetric device.

24. (Canceled)

25. (Original) A method of monitoring glucose levels, comprising: providing i) a host, and ii) an implantable device according to claim 1; and implanting said device in said host under conditions such that said device measures glucose for a period exceeding 360 days.

26. (Original) A method of monitoring glucose levels according to claim 25, wherein said device is implanted subcutaneously.

27. (Original) A method of measuring glucose in a biological fluid, comprising: providing i) a host, and ii) a implantable device according to claim 1 wherein said glucose determining member of said implantable device is capable of continuous glucose sensing; and implanting said device in said host.

28. (Original) A method of measuring glucose according to claim 27, wherein said device is implanted subcutaneously.

29. (Original) A method of providing a low molecular weight filtrate of a biological fluid to said glucose determining member of an implantable device according to claim 1 by applying an interference layer according to claim 11 to said device.

30. (Original) A method of monitoring glucose levels, comprising: providing i) a host, and ii) an implantable device according to claim 1; implanting said device subcutaneously in said host; and arranging said device for continuous glucose sensing while said device is implanted in said host.

31. (Original) A method of monitoring glucose levels according to claim 30, wherein said device is arranged for sensing glucose for a period exceeding 360 days.

32. (Currently amended) An implantable device for continuous glucose monitoring comprising:

(a) a housing comprising an electronic circuit; and

(b) a sensor operably connected to said electronic circuit of said housing, said sensor comprising (i) a member for determining the amount of glucose in a biological sample and (ii) a ~~bioprotective member~~ tissue interface region positioned more distal to said housing than said glucose determining member and including ~~a bioprotective membrane having a tissue interface and a sensor interface, said membrane~~ a first portion being substantially impermeable to

macrophages ~~at its sensor interface~~ and a second portion adapted to promote ~~promoting~~ vascularization ~~at its tissue interface~~.

33. (Original) The device according to claim 32, wherein said glucose determining member comprises an oxidase enzyme membrane.

34. (Original) The device of claim 33 wherein said oxidase enzyme membrane comprises a glucose oxidase.

35. (Original) The device of claim 32 wherein said glucose determining member comprises a glucose binding compound for reversible binding of glucose.

36. (Original) The device of claim 35 wherein said glucose binding compound is concanavalin A.

37. (Currently amended) The device of claim 35 wherein said ~~bioprotective membrane~~ tissue interface region comprises a composite membrane.

38. (Original) The device of claim 37 wherein said composite membrane comprises an ePTFE layer and a biostable layer.

39. (Currently amended) The device of claim 38 wherein said ~~biostable layer~~ second portion of said tissue interface region comprises a biostable urethane and a hydrophilic polymer.

40. (Original) The device of claim 39 wherein said hydrophilic polymer is polyvinylpyrrolidone.

41. (Original) The device of claim 40 wherein said polyvinylpyrrolidone is present in said biostable layer at a concentration of not less than 20 weight percent and not more than 35 weight percent.

42. (Currently amended) The device of claim 32 wherein said ~~bioprotective membrane~~ tissue interface region comprises a biostable urethane and a hydrophilic polymer at its ~~sensor interface~~ first portion.

43. (Currently amended) The device of claim 32 wherein said ~~bioprotective membrane~~ tissue interface region comprises ePTFE at its ~~tissue interface~~ second portion.